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EXPLORATORY SURVEYS FOR SNOW CRAB IN NEWFOUNDLAND AND LABRADOR 1968-1985

by

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TABLE OF CONTENTS

	Page
Abstract	iv
Preface	v
Introduction	1
1968 Crab Explorations	1
1968 Crab Explorations	2
1969 Crab Explorations (Fig. 1)	2
1970 Crab Explorations (Fig. 2)	4
Summary - 1968, 1969 and 1970 Explorations	6
1976 Crab Explorations	6
1980 Crab Explorations	7
1981 Crab Explorations	9
1982 Crab Explorations	11
1983 Crab Explorations	14
1984 Crab Explorations	17
1985 Commercial Crab Fishing, Labrador	22
Summary	24
Acknowledgments	30
Bibliography	31

ABSTRACT

Brothers, G., W. Barney. 1986. Exploratory Surveys for Snow Crab in Newfoundland and Labrador 1968-1985. Can. MS Rep. Fish. Aquat. Sci. 1887: 31 p.

Summarizes project reports on various Exploratory Snow Crab Surveys undertaken around Newfoundland and Labrador during the period 1968-1985 by the Fisheries Development Branch of the Department of Fisheries and Oceans.

RESUMÉ

Brothers, G., W. Barney. 1986. Exploratory Surveys for Snow Crab in Newfoundland and Labrador 1968-1985. Can. MS Rep. Fish. Aquat. Sci. 1887; 31 p.

Résumé de comptes rendus de divers relevés exploratoires du crabe des neiges effectués dans les environs de Terra-Neuve et du Labrador. Ces relevés ont été réalisés de 1968 à 1985 par la Direction du développement des pêches du ministére des Pêches et des Océans.

PREFACE

This is a revised edition of a background paper presented at the Snow Crab Seminar, Gander, Newfoundland, January 24-27, 1984 which was organized by the Department of Fisheries and Oceans (Newfoundland Region), St. John's, Newfoundland.

The surveys from 1968 to 1970 were conducted jointly with the Newfoundland Department of Fisheries.

Not covered in this report are results from Exploratory Snow Crab Surveys carried out by the Newfoundland Department of Fisheries; detailed reports of these are available from that Department.

INTRODUCTION

During the early 1960's monofilament gillnets were introduced to Newfoundland and although they were efficient in catching groundfish, they also proved successful in catching Snow crab **(Chionoecetes opilio)**, then considered a nuisance species. Sometimes crab would fill the nets, causing fishermen many hours of extra work disentangling them. It was at this time that the Industrial Development Branch, Federal Department of Fisheries (now the Fisheries Development Branch, Department of Fisheries and Oceans), in conjunction with the Provincial Department of Fisheries, initiated the development of a crab fishery in Newfoundland.

In 1966 and 1967 data on incidental crab caught by gillnets was collected by observers at stations around Newfoundland. The favourable reports from these sources were followed up in 1968 by extensive crab surveys using crab pots along the Newfoundland and Labrador coasts.

1968 CRAB EXPLORATIONS

In 1968 the **M/V CECILIA II**, on charter to the Industrial Development Branch, Ottawa, explored the west coast of Newfoundland and the Labrador Coast north to Groswater Bay, Labrador (Fig. 1) (Anon. 1969). Results were negative from most of the area surveyed, except for possible commercial quantities found in Bonne Bay, off Port aux Choix, and 30-40 nautical miles off Black Tickle, Labrador.

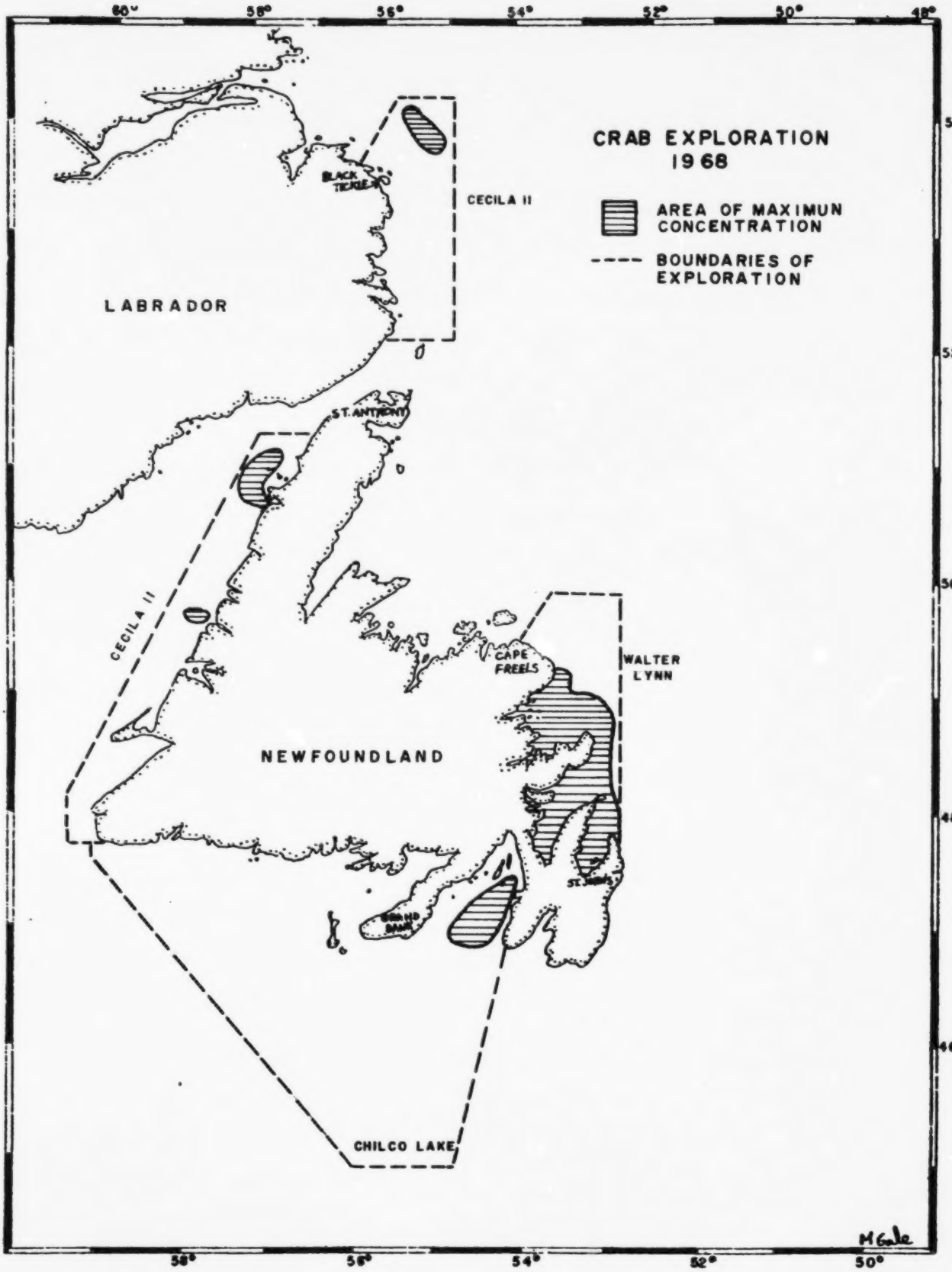

60°
58°
56°
54°
52°
50°
48°
54°
52°
50°
48°
46°
CRAB EXPLORATION
1968
AREA OF MAXIMUN CONCENTRATION
BOUNDARIES OF EXPLORATION
CECILA II
BLACK TICKLE
LABRADOR
ST. ANTHONY
CECILA II
CAPE FREELS
WALTER LYNN
NEWFOUNDLAND
GRAND BANK
ST. JOHN'S
CHILCO LAKE
M Gale
58°
56°
54°
52°
50°

Fig. I.

The Industrial Development Branch, Newfoundland Region, in conjunction with the provincial department of Fisheries also conducted crab surveys during 1968. The **M/V CHILCO LAKE** explored the south coast from Port aux Basques to Placentia (Hinds, 1970b, p. 15,17). The likelihood of a limited commercial crab fishery was noted in Placentia Bay and Fortune Bay. However, results were negative in the rest of these waters. The **M/V WALTER LYNN** explored Conception Bay, Trinity Bay, Bonavista Bay and from Cape Freels to Twillingate (Anon. 1968). Parts of all three bays showed some potential for a commercial crab fishery; the Cape Freels to Twillingate area produced almost no crab.

While these surveys were being carried out, a Snow crab operation was started as a pilot project in Hants Harbour, Trinity Bay. The plant processed some of the "incidental" crab caught in gillnets but was in production for only 15 days that year due to the limited amount of crab landed.

1969 CRAB EXPLORATIONS

Again in 1969 extensive crab surveys were carried out (Fig. 2). The **M/V INVERSEN** explored the South and East Coast from Ramea to St. John's (Hinds, 1970b, p. 15,17). Commercial quantities were found in St. Mary's Bay and off Fermeuse; lesser quantities were found in Placentia Bay. The **M/V BEINER** explored Bonavista Bay and the coast of Labrador from Black Tickle to Makkovik (M. Edge, unpublished work). Commercial quantities of crab were reported in Bonavista Bay and off Black Tickle but

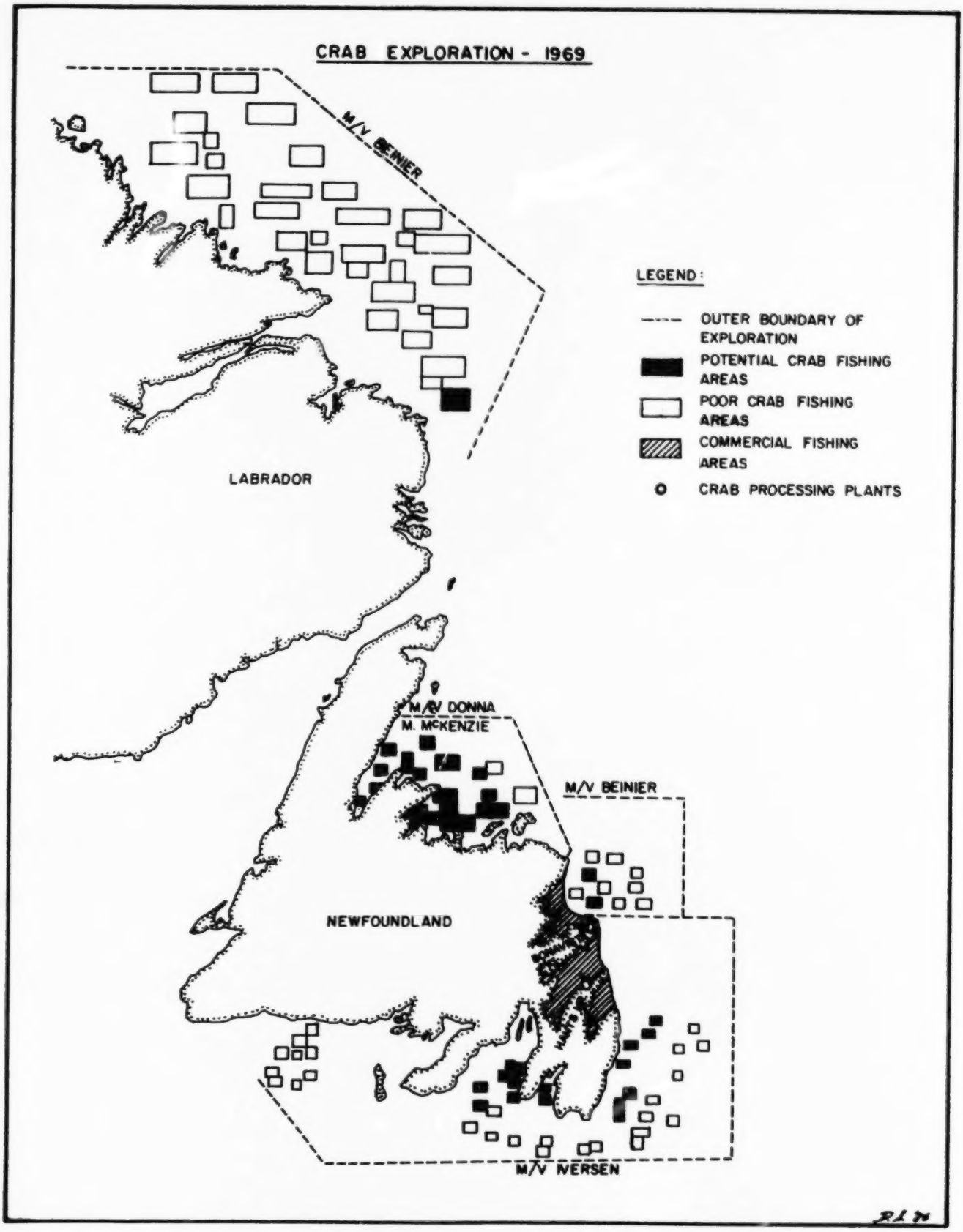

CRAB EXPLORATION - 1969
M/V BEINIER
LABRADOR
LEGEND:
OUTER BOUNDARY OF EXPLORATION
POTENTIAL CRAB FISHING AREAS
POOR CRAB FISHING AREAS
COMMERCIAL FISHING AREAS
CRAB PROCESSING PLANTS
M/V DONNA M. McKENZIE
M/V BEINIER
NEWFOUNDLAND
M/V IVERSEN

Fig. 2

the remainder of the Labrador coast that had been explored showed no commercial potential. The **M/V DONNA M. McKENZIE** explored Notre Dame Bay and White Bay (Hinds, 1970a p. 22-23). This exploration indicated a good potential in both bays.

Onshore, the crab plant at Hants Harbour resumed operations, and a second crab processing plant opened in Bonavista. Also in 1969, commercial crab fishing was began in Conception Bay, Trinity Bay and Bonavista Bay.

1970 CRAB EXPLORATIONS

In 1970 some of the areas covered in previous surveys were once again explored (Fig. 3) (Hinds 1970a and 1970b). The **M/V DONNA M. McKENZIE** was chartered to investigate Placentia Bay, Bonavista Bay, and both sides of the Northern Peninsula from April to November.

Placentia Bay was surveyed from April 17 to June 22. All areas surveyed, except a small portion of the bottom of the bay, produced excellent catches of Snow crab; only 25 percent were of commercial size.

The areas around the Northern Peninsula was surveyed from July 1 to September 21. The area showed some crab distribution throughout. Although the catches were not exceptional on the North East Coast, fair catches of Snow crab were obtained South of St. Anthony.

Bonavista Bay was explored from September 24 to November 2. Crab were distributed throughout the bay with good catches recorded in some areas.

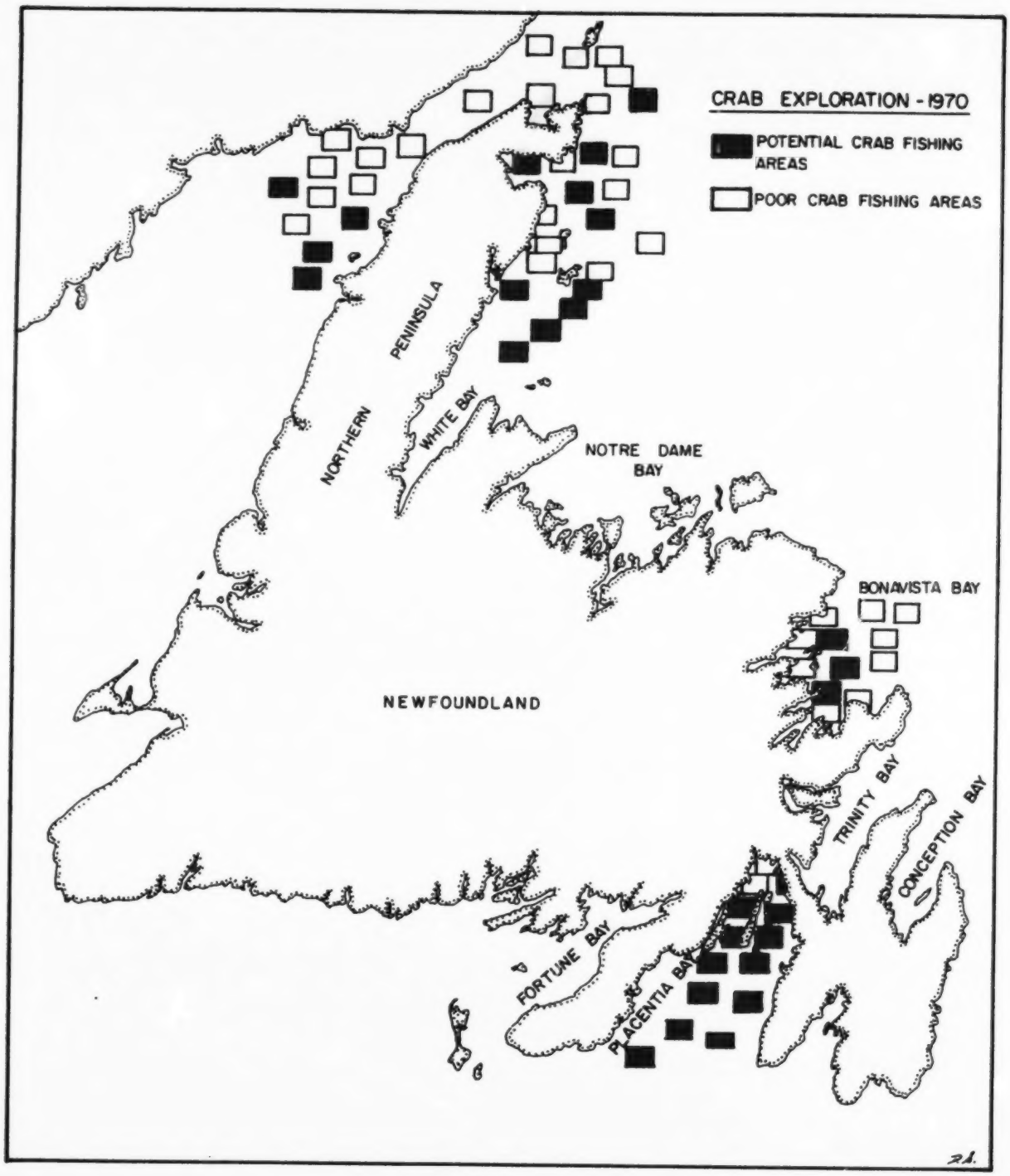

CRAB EXPLORATION - 1970
POTENTIAL CRAB FISHING AREAS
POOR CRAB FISHING AREAS
NORTHERN PENINSULA
WHITE BAY
NOTRE DAME BAY
BONAVISTA BAY
NEWFOUNDLAND
TRINITY BAY
CONCEPTION BAY
FORTUNE BAY
PLACENTIA BAY

Fig. 3.

In Placentia Bay the quantity of crab caught usually depended on the depth of water. Very few were caught in traps set in water less than 165 m (90 fathoms) deep; the few that were caught were very small with much marine growth on their shells. In some areas of the Northern Peninsula and in Bonavista Bay, depth had no bearing on the quantity and size of crab caught. In these areas large crab were caught in water as shallow as 73 and 91 m (40 and 50 fathoms). In Bonavista Bay the majority of crab caught were in depths of less than 146 m (80 fathoms).

OBSERVATIONS - 1968, 1969 and 1970 EXPLORATIONS

During the surveys, it was determined that bottom type is important in determining the distribution of the Snow crab. In all areas fished, the best catches were recorded at the lower edge of slopes which had mud bottoms. Rocky bottoms produced small quantities of crab usually of a small size distribution.

Throughout the surveys, two types of crab pots were used. The large square pot measured 1.5 m x 1.5 m x .6 m (59" x 59" x 24") and weighed 61.7 kg (136 lb). The conical pot measured 1.2 m (47") diameter at the base, .7 m (28") at the top and .6 m (24") high and weighed approximately 22.5 kg (50 lb). During this time herring and cod offal were found to be good bait for Snow crab. At times of inclement weather in Placentia Bay, the large square trap was found more effective than the conical pots in holding the crab.

1976 CRAB EXPLORATIONS

From 1970 to 1979 there was a productive inshore Snow crab fishery and only one exploratory crab survey was carried out. In 1976 a 20 m (65') the **M/V ROBIN AND GAIL**, was chartered to complete a shrimp and crab survey in areas off southern Labrador (Hawke Channel) and Northern Newfoundland (Fig. 4) (Brothers 1977). The shrimp otter trawl was used to catch shrimp and conical pots were used to catch crab. Results from this exploration indicated a potential for a commercial crab fishery in areas of the Hawke Channel and southern Labrador in depths from 365 to 412 m (200- 225 fathoms).

1980 CRAB EXPLORATIONS

During July 9 to October 30, 1980 the **M/V EASTERN EXPLORER** was chartered to explore for Snow crab in areas along the east coast of Newfoundland and Labrador (Fig. 5) (Brothers et al. 1981).

The eastern Labrador area extended from Battle Harbour to Black Tickle and as far as 60 nautical miles out to sea. Twenty-one fleets of crab pots with 20 pots in each fleet were hauled. Only two fleets had over 11.3 kg (25 lb) per pot. Three fleets caught 7 to 11 kg (15 to 25 lb) per pot and the remaining fleets produced poor catches.

In an area surveyed east of Canada Bay extending from St. Anthony to the Horse Islands and 70 nautical miles out to sea from Englee the average catch was 6 kg (13.23 lb) per pot. The catch in areas with depths

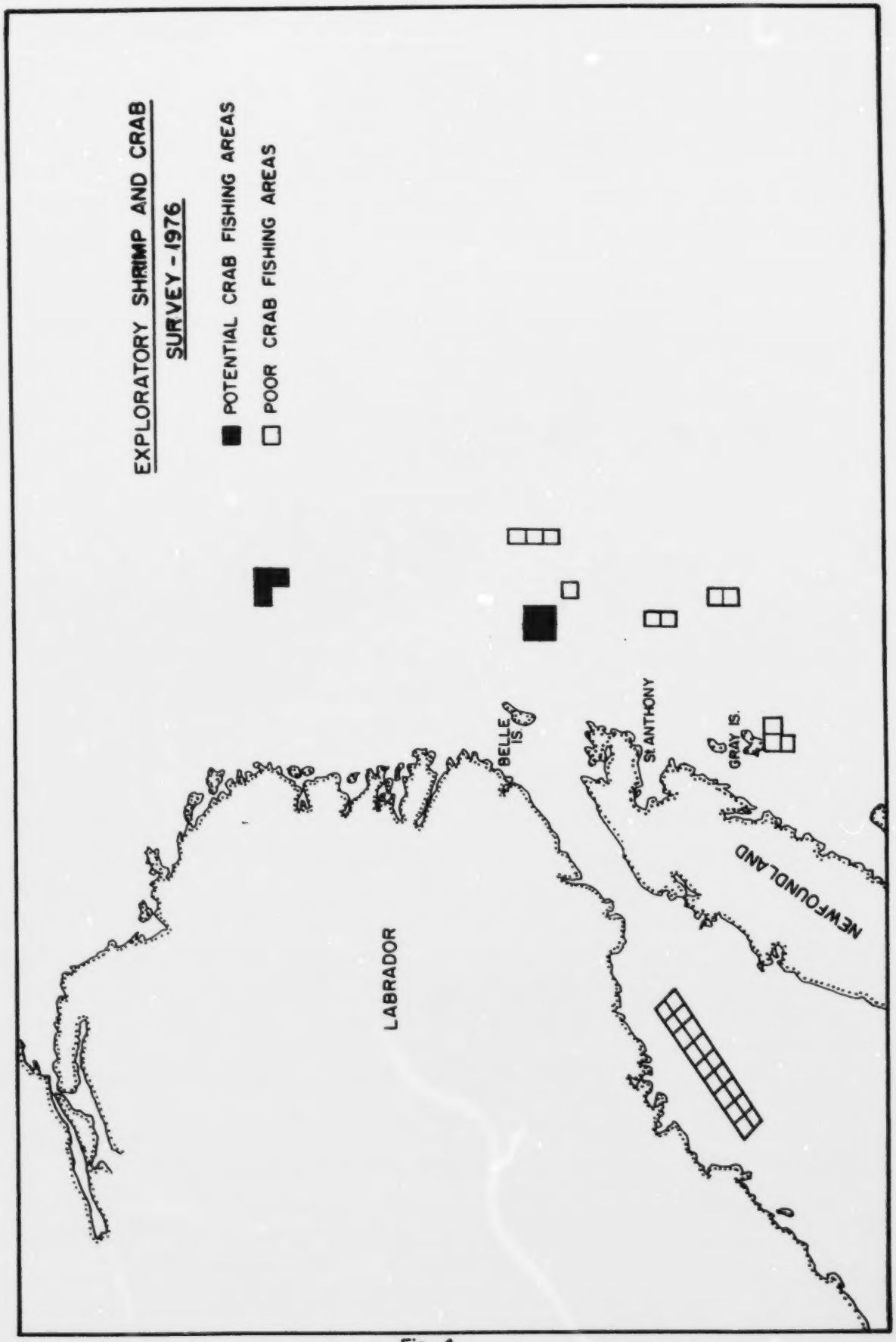

EXPLORATORY SHRIMP AND CRAB SURVEY - 1976
POTENTIAL CRAB FISHING AREAS
POOR CRAB FISHING AREAS
LABRADOR
BELLE IS.
St ANTHONY
GRAY IS.
NEWFOUNDLAND

Fig. 4.

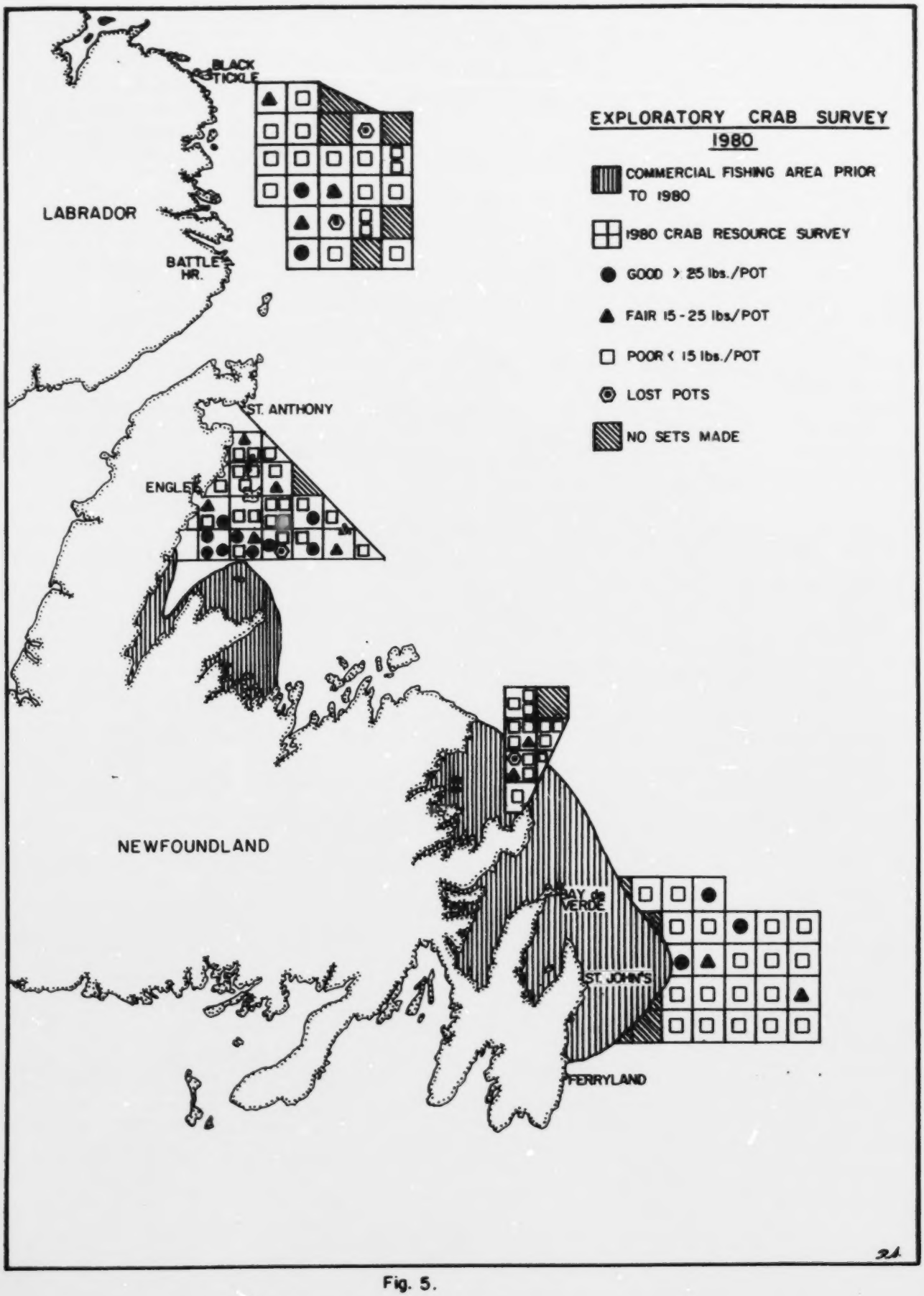

EXPLORATORY CRAB SURVEY
1980
COMMERCIAL FISHING AREA PRIOR TO 1980
1980 CRAB RESOURCE SURVEY
GOOD > 25 lbs./POT
FAIR 15 - 25 lbs/POT
POOR < 15 lbs./POT
LOST POTS
NO SETS MADE
BLACK TICKLE
LABRADOR
BATTLE HR.
ST. ANTHONY
ENGLEE
NEWFOUNDLAND
BAY de VERDE
ST. JOHN'S
FERRYLAND

Fig. 5.

greater than 183 m (100 fathoms) averaged 9 kg (19.8 lb) per pot, suggesting that this area had a good potential for a commercial crab fishery.

An area surveyed in the mouth of Bonavista Bay resulted in poor catches. Of the 16 fleets of pots hauled, only two had fair catches 7 to 11 kg (15 to 25 lb) per pot while the remaining 14 fleets had poor catches.

Another area surveyed was east of St. John's extending from Ferryland to Bay de Verde and continuing 90 nautical miles out to sea. Of the 23 fleets of pots hauled three resulted in fair catches and 17 had poor catches. The poor catches encountered in this area were in depths less than those fished by commercial vessels; and all but two sets were in depths less than 183 m (100 fathoms).

1981 CRAB EXPLORATIONS

The need for a more thorough survey than the one conducted in 1980, when crab pot fleets were set 12-15 nautical miles apart, led to another survey, both wider ranging and more intensive in 1981 (Fig 6) (Brothers and Barney 1981). This survey was carried out along the eastern coast of Newfoundland extending from 5 to 100 nautical miles offshore. The **M/V Beothic Venture**, a 25 m (80') steel vessel was chartered to carry out this survey.

One of the areas surveyed, from July 9 to July 24, was on the northern Grand Banks extending from 50 to 100 nautical miles east by north off St. John's in depths ranging from 183 to 324 m (100 - 177 fathoms).

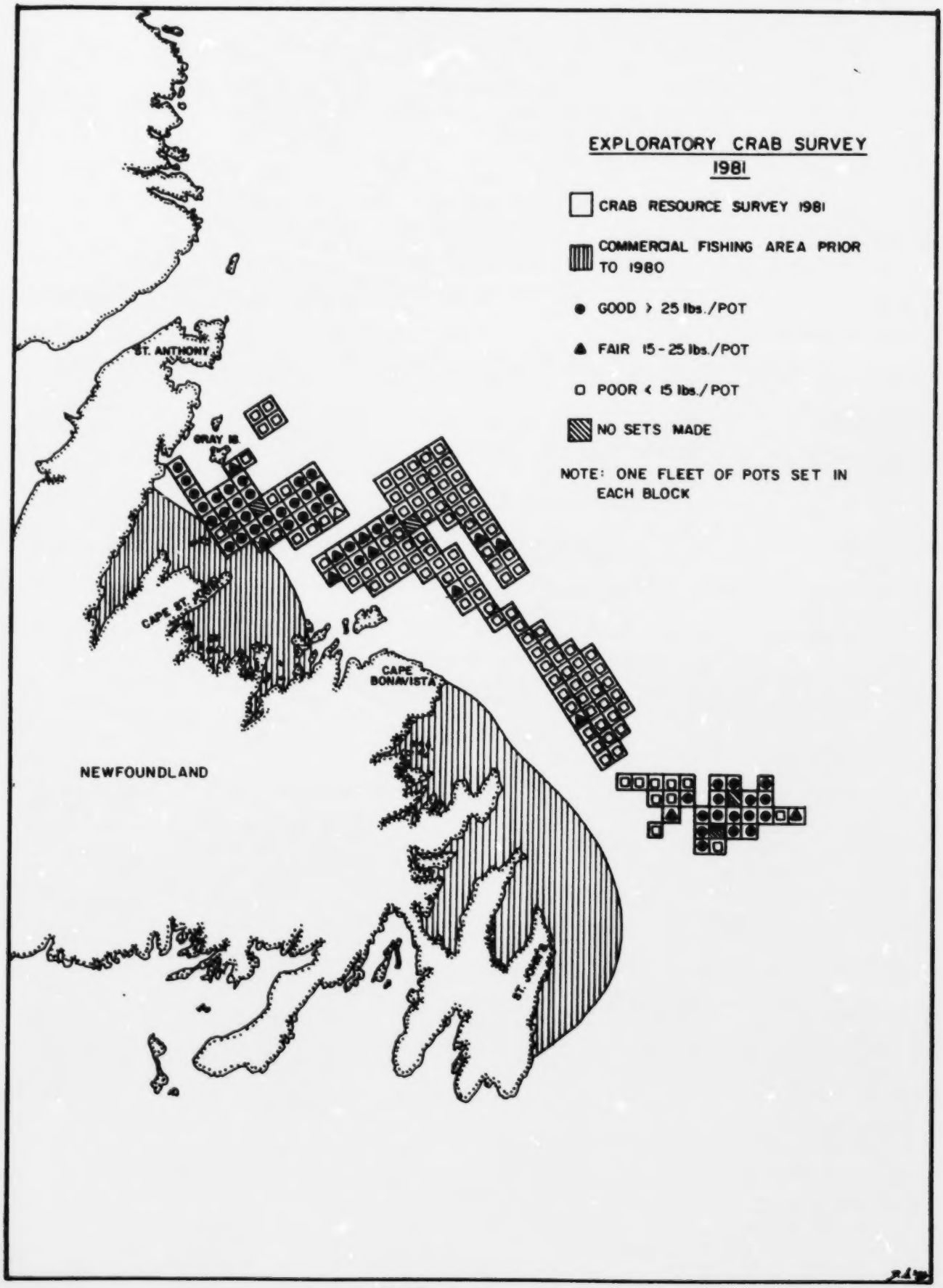

EXPLORATORY CRAB SURVEY
1981
CRAB RESOURCE SURVEY 1981
COMMERCIAL FISHING AREA PRIOR TO 1980
GOOD > 25 lbs./POT
FAIR 15 - 25 lbs./POT
POOR < 15 lbs./POT
NO SETS MADE
NOTE: ONE FLEET OF POTS SET IN EACH BLOCK
ST. ANTHONY
GRAY IS.
CAPE ST. JOHN
CAPE BONAVISTA
NEWFOUNDLAND
ST. JOHN'S

Fig. 6.

The average was 18 kg (40 lb) of commercial crab per pot but the individual fleet catch ranged from 1 to 40 kg (2-90 lb) per pot. Less than 1 percent of the total catch was undersized (less than 95 mm) while there were no soft-shell crab caught.

A second region of commercial fishing interest was found between the Funks and Cape St. John and extending from 5 to 30 nautical miles offshore. Between September 3 to September 15, 34 fleets of crab pots were fished in depths ranging from 135 to 353 m (74 to 193 fathoms).

The average catch was over 5 kg (11 lb) of commercial crab per pot, but several fleets produced over 18 kg (40 lb) per pot. Seven fleets of crab pots produced good catches of more than 11 kg (25 lb) per pot while five fleets showed a fair catch of 7 to 11 kg (15-25 lb) per pot. Twenty-two fleets produced a poor catch of less than 7 kg (15 lb) per pot.

Another area of exploration during the August 15 to September 3 period was located between Horse Islands and Grey Islands and extended 60 nautical miles east of Canada Bay in water depths ranging from 156 to 317 m (85 to 173 fathoms). The average catch of the 42 fleets fished was 12 kg (27 lb) per pot with several fleets producing over 23 kg (50 lbs) per pot. Twenty-five fleets produced good catches 11 kg (25+ lb) per pot while the remaining 12 fleets showed poor catches of less than 7 kg (15 lb) per pot. The low catch rates occurred on the fringes of this area and were isolated cases except for those in the northeast corner and at the southern end; these areas seem to be characterized by a rocky bottom. Sixteen percent of the total catch consisted of undersized crab. However, a large percentage of these occurred in isolated spots where only small amounts of commercial

crab were taken. Eleven percent of the total catch consisted of soft-shelled crab.

Two other areas which were surveyed between July 24 and August 12 were off Bonavista Bay and off the Funks. These resulted in poor crab catches. The large amounts of wolffish caught in these areas may have contributed to the low catch rates.

1982 CRAB EXPLORATIONS

As the province's catching and processing capacity increased and inshore crab stocks started declining, industry and fishermen requested assistance in finding new Snow crab resources further offshore. During 1982 the Fisheries Development Branch conducted an offshore crab resource survey (Fig. 7) with a view to extending the range of present crab vessels (Barney and King 1983). Since good catches were recorded off the Avalon Peninsula during the 1981 survey, it was decided to carry out the 1982 survey outside this region.

The **M/V ZALEY**, a 47 m (149') side dragger, was chartered for 30 days between August 18 and September 17, and 107 fleets of gear were set in areas ranging from 75-150 nautical miles offshore.

Of the 107 sets made, only 22 sets yielded a commercial catch of over 7 kg (15 lb) per pot. Eight of the 22 were located east of Cape St. Francis (subarea 11, Fig. 7) where depths ranged from 174 to 239 m (95 to 130 fathoms). Here the catch rate ranged from 0 to 23 kg (0 to 50 lb) of commercial crab per pot. In subarea 11 eight of the area units surveyed

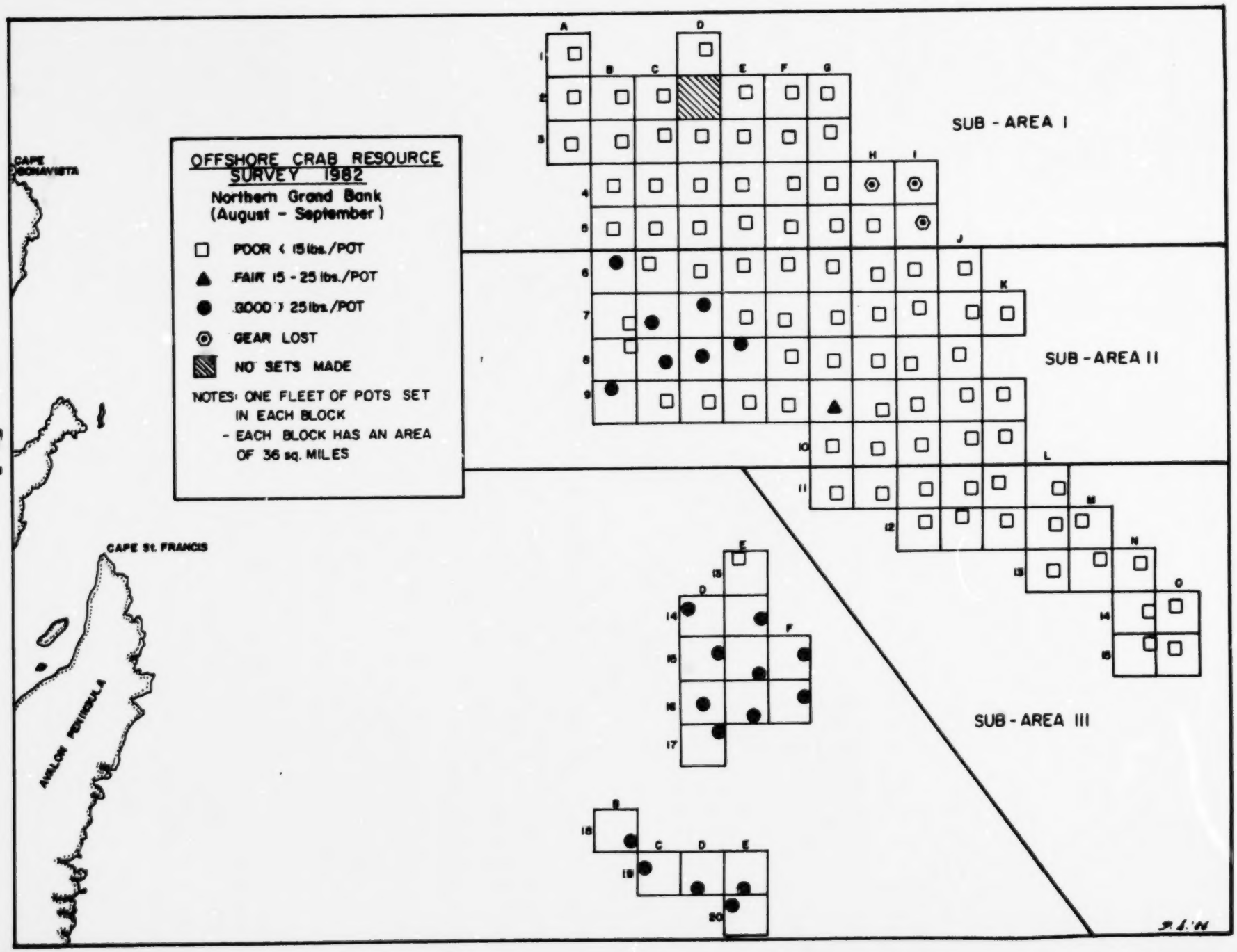

OFFSHORE CRAB RESOURCE SURVEY 1982
Northern Grand Bank
(August - September)
POOR (15 lbs./POT
FAIR 15 - 25 lbs./POT
GOOD) 25 lbs./POT
GEAR LOST
NO SETS MADE
NOTES: ONE FLEET OF POTS SET IN EACH BLOCK
- EACH BLOCK HAS AN AREA OF 36 sq. MILES
SUB - AREA I
SUB - AREA II
SUB - AREA III
CAPE BONAVISTA
CAPE ST. FRANCIS
AVALON PENINSULA

Fig. 7

were also surveyed during 1981. Two of these showed an increase in catch rates while six showed a decrease. The overall catch for this area, which was not commercially fished before, declined by over 35 percent from 1981. Most crab fishermen, operating in other areas also experienced a decrease in catch rates in 1982.

Another area of commercial crab concentrations found during the 1982 survey was in the Downing Basin and in deep holes north of the Downing Basin. In this localized area east of St. John's, 14 fleets produced commercial catches of over 11 kg (25 lb) of crab per pot. The Downing Basin produced an average catch per pot of over 27 kg (60 lb) in depths of 36 to 46 m (80 to 102 fathoms). In the holes north of the Downing Basin, 10 sets were made in depths of 154 to 220 m (84 to 120 fathoms). Nine of these sets produced commercial catches with an average of over 23 kg (42 lb) of crab per pot.

Subareas 1 and 111, and the outermost parts of subarea 11 were very unproductive. Since most areas of the northern Grand Banks that are considered to be suitable for crab fishing had been surveyed in 1981 or were now being fished by commercial crab fishermen, it was recommended that no further exploratory work be carried out in this region.

1983 CRAB EXPLORATIONS

In 1983 the Fisheries Development Branch initiated two crab resource surveys using the **M/V Beothic Venture**, a 25 m (80') steel vessel. One survey was carried out off the south coast of Newfoundland (Fig. 8)

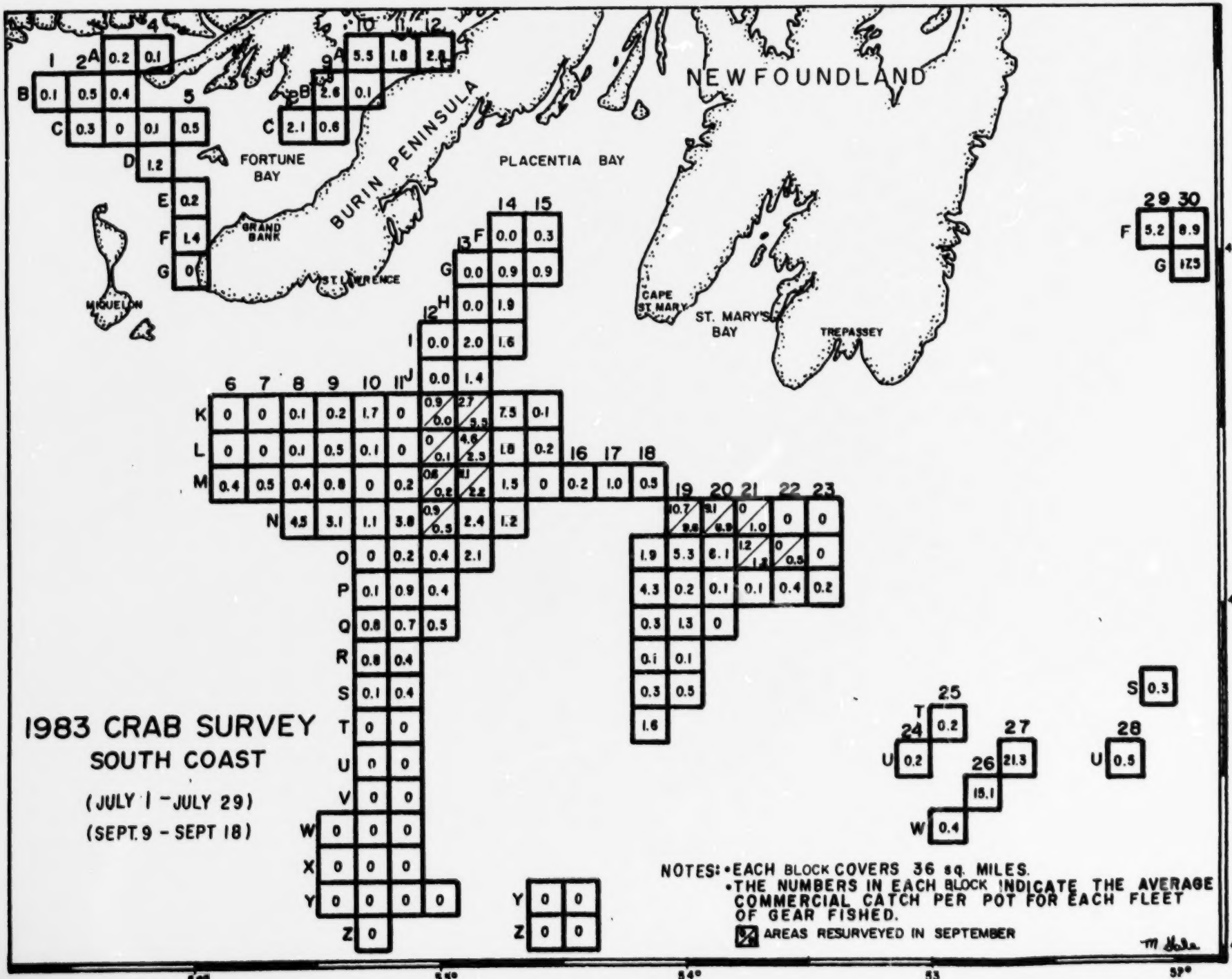

NEWFOUNDLAND
BURIN PENINSULA
PLACENTIA BAY
FORTUNE BAY
GRAND BANK
ST. LAWRENCE
MIQUELON
CAPE ST. MARY
ST. MARY'S BAY
TREPASSEY
1983 CRAB SURVEY
SOUTH COAST
(JULY 1 - JULY 29)
(SEPT. 9 - SEPT 18)
NOTES: • EACH BLOCK COVERS 36 sq. MILES.
• THE NUMBERS IN EACH BLOCK INDICATE THE AVERAGE COMMERCIAL CATCH PER POT FOR EACH FLEET OF GEAR FISHED.
AREAS RESURVEYED IN SEPTEMBER
47°
46°
45°
56°
55°
54°
53
52°

Fig.8

while the other was completed off northern Newfoundland and Labrador (Fig. 9) (Barney et al. 1983).

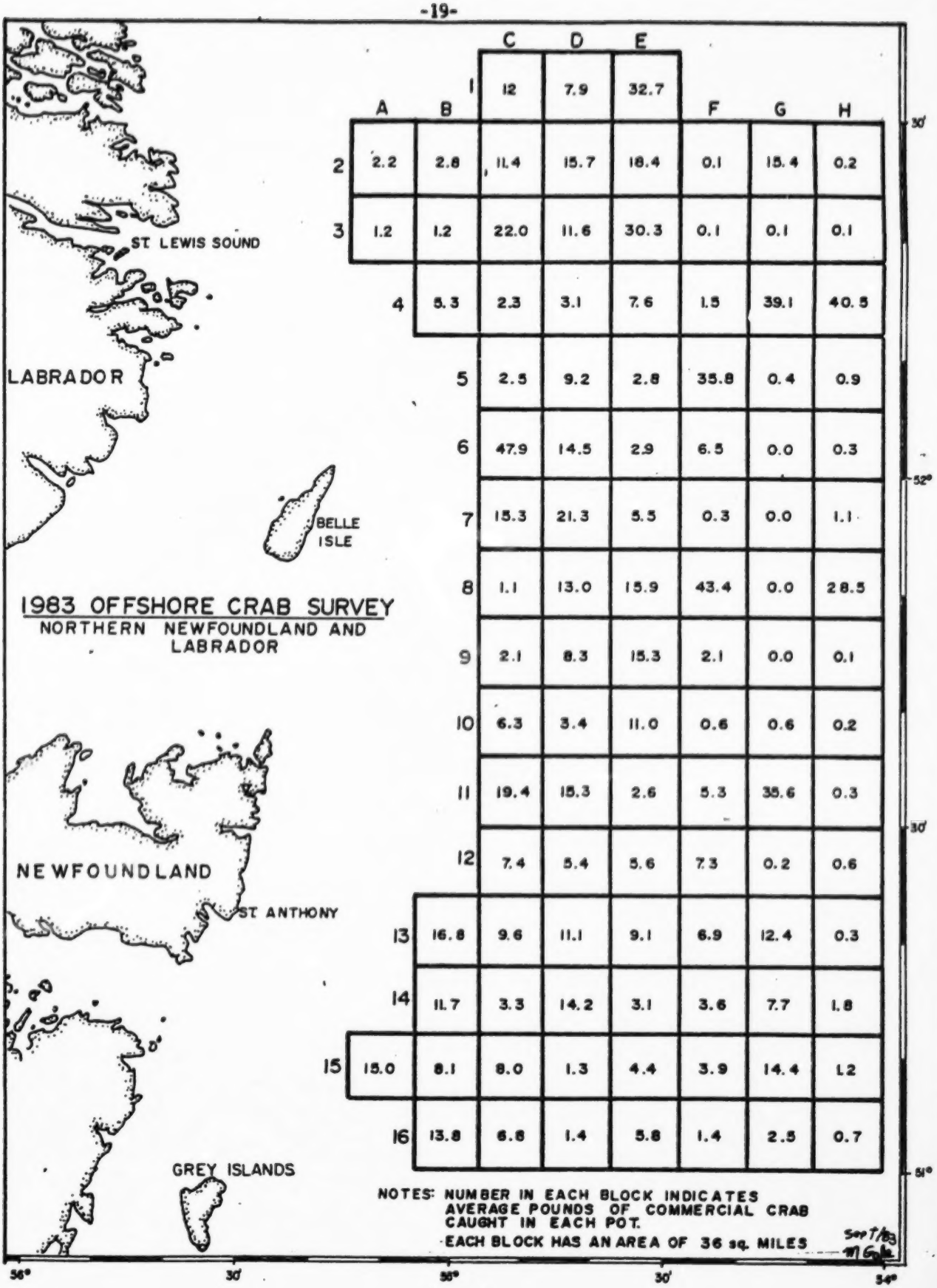
The south coast survey took place from July 1 to July 29 and from September 9 to September 18. During the first period, most of the area south of the Avalon peninsula to Hermitage Bay, from near shore up to 100 nautical miles offshore, was covered. During this time, 120 fleets of crab pots were fished, including sets in Fortune Bay and the outer limits of Hermitage Bay. All sets, which were fished for 21 to 75 hours in depths of 104 to 329 m (57 to 180 fathoms), produced poor results.

Since catch rates might have been better at a different time of year, it was decided to resurvey portions of this area as well as surveying areas east and southeast of the Avalon and off Placentia Bay.

This resulted in 34 more fleets being fished between September 9 and September 18. Three fleets of gear located east and southeast of the Avalon peninsula produced fair catches of between 7 to 11 kg (15 and 25 lb) per pot in depths from 104 to 130 m (57 and 71 fathoms) for 49-55 hours fishing time. In units that were surveyed the second time, catch rates actually declined by 25 percent. In Placentia Bay, 12 sets were made in deep water adjacent to and south of Burin resulting in poor catches of less than 1 kg (2 lb) per pot.

The 1983 survey off northern Newfoundland and Labrador (Fig. 9) took place during August 10 to September 8 from the Grey Islands to Williams Harbour up to 65 nautical miles offshore.

A total of 103 fleets of crab pots were fished during the project in water depths of 156 to 329 m (85 to 180 fathoms). Twenty-one fleets of



	A	B	C	D	E	F	G	H
1			12	7.9	32.7			
2	2.2	2.8	11.4	15.7	18.4	0.1	15.4	0.2
3	1.2	1.2	22.0	11.6	30.3	0.1	0.1	0.1
4		5.3	2.3	3.1	7.6	1.5	39.1	40.5
5			2.5	9.2	2.8	35.8	0.4	0.9
6			47.9	14.5	2.9	6.5	0.0	0.3
7			15.3	21.3	5.5	0.3	0.0	1.1
8			1.1	13.0	15.9	43.4	0.0	28.5
9			2.1	8.3	15.3	2.1	0.0	0.1
10			6.3	3.4	11.0	0.6	0.6	0.2
11			19.4	15.3	2.6	5.3	35.6	0.3
12			7.4	5.4	5.6	7.3	0.2	0.6
13		16.8	9.6	11.1	9.1	6.9	12.4	0.3
14		11.7	3.3	14.2	3.1	3.6	7.7	1.8
15	15.0	8.1	8.0	1.3	4.4	3.9	14.4	1.2
16		13.8	6.8	1.4	5.8	1.4	2.5	0.7

Sept/83 M Gale

Fig. 9

gear produced over 7 kg (15 lb) of crab per pot. Four of these occurred in isolated sets off the Northern Peninsula; seven were off Belle Isle (six of seven were in one general area). The remaining sets producing commercial quantities were located off St. Lewis Sound in two localized areas.

Good catches were recorded over most depths surveyed and fishing times for pots seemed to be best at around 40 hours. The areas of good catch rates occurred between 20 and 50 nautical miles from land and the results indicate that the resource may extend over an even larger area since good catch rates occurred along the edges of the area surveyed.

1984 CRAB EXPLORATIONS

During 1984 the **M/V LADY SAUNDERS,** a 34 m (112') wooden vessel under charter to the Fisheries Development Branch conducted another crab survey off the northeast coast of Newfoundland (Fig. 10) and the coast of Labrador (Fig. 11) (Barney and Hiscock 1985).

The survey off the northeast coast of Newfoundland extended from 70 nautical miles east of Fogo Island to 5 nautical miles northeast of the Grey Islands. Part of this area, which includes the Grey Islands and an area 50 nautical miles northeast to southeast of the Grey Islands, was resurveyed later in the year to further assess potential for extension of the commercial crab fishery. Results for this area will be discussed in two parts: East of Longitude 54°00'W and west of Longitude 54°00'W.

There were 110 fleets of crab pots fished east of Longitude 54°00'W. The depth ranged from 110 to 481 m (60 to 263 fathoms) with 72

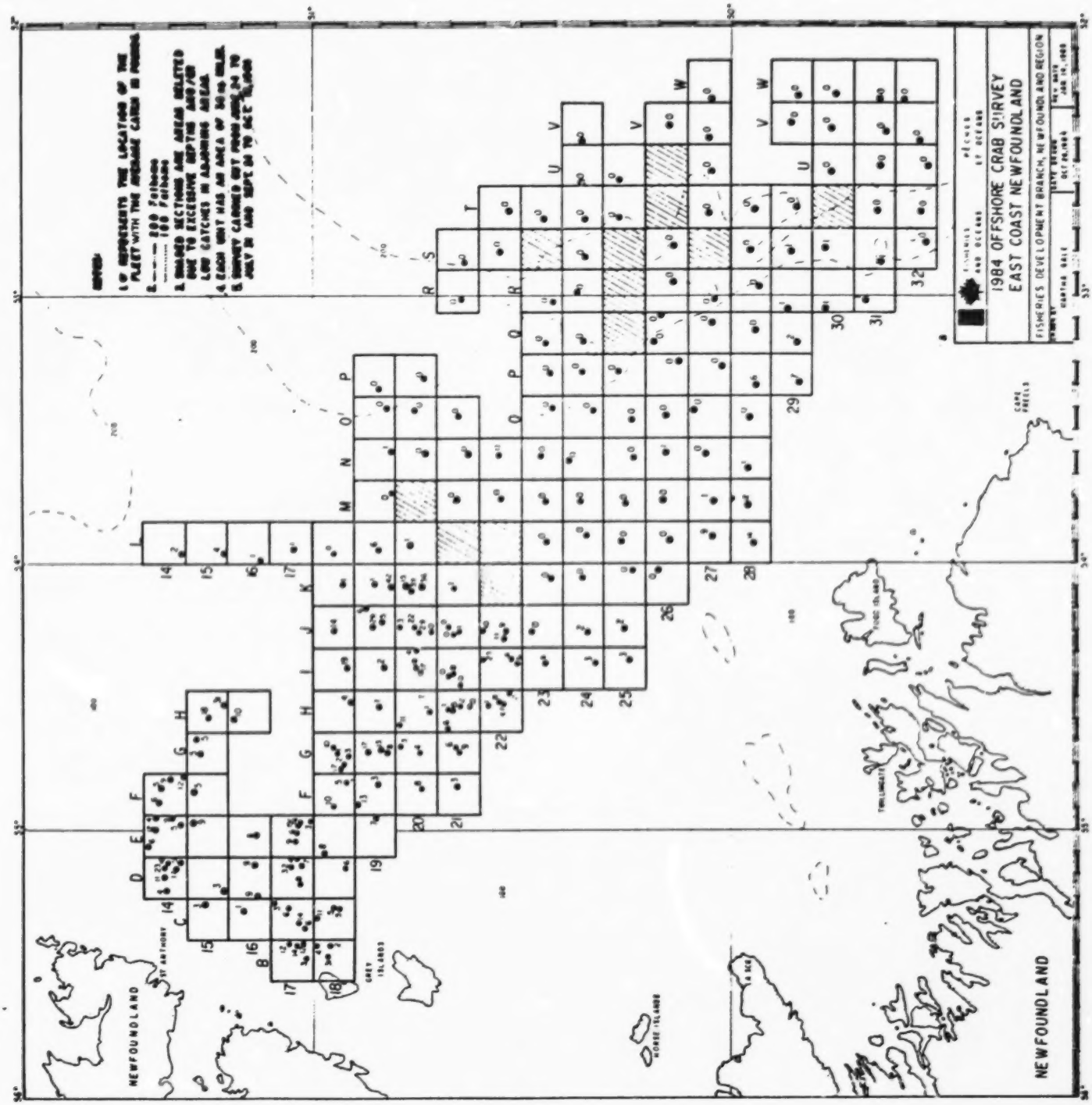

1984 OFFSHORE CRAB SURVEY
EAST COAST NEWFOUNDLAND
NEWFOUNDLAND
NEWFOUNDLAND

Figure 10

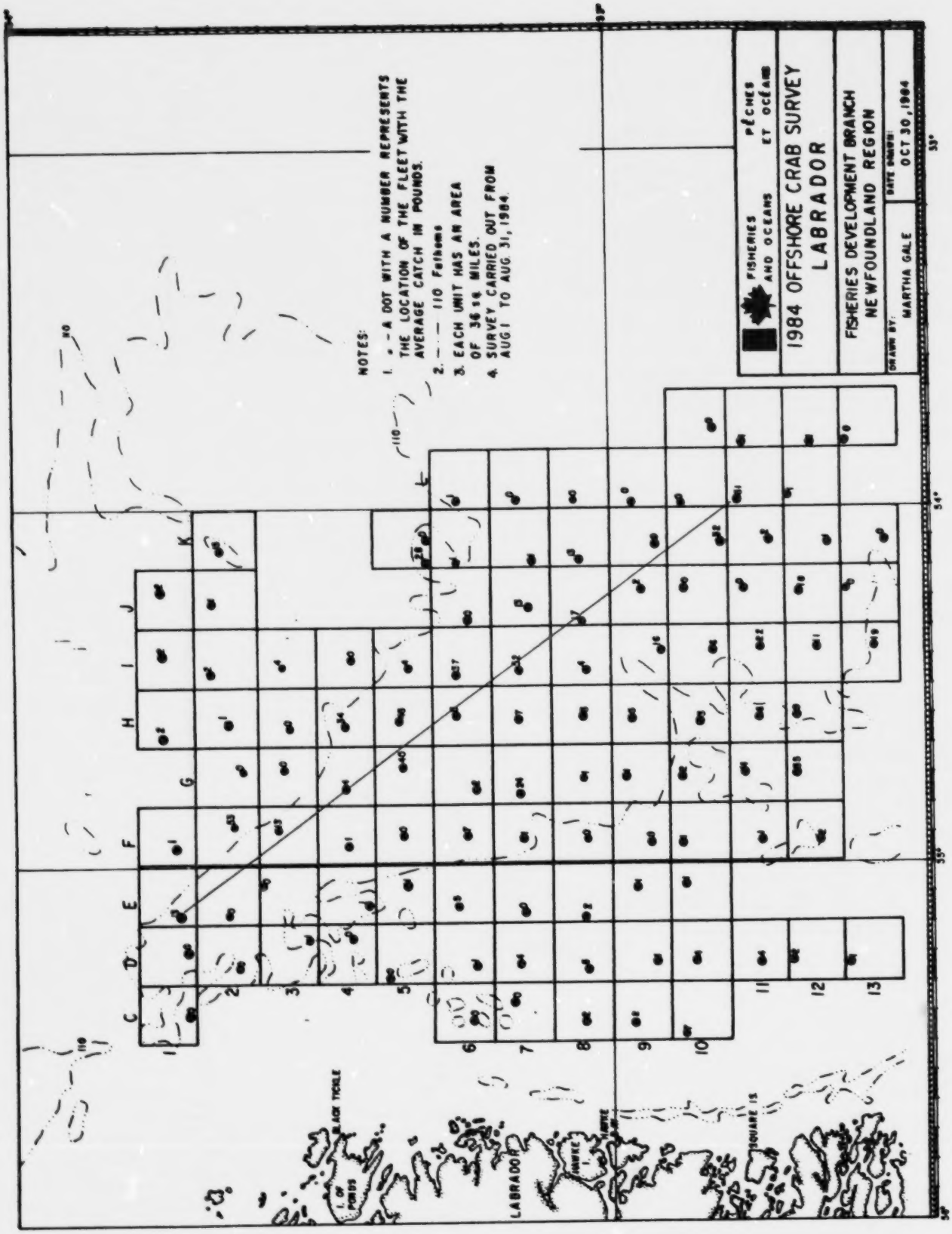

NOTES:
1. • - A DOT WITH A NUMBER REPRESENTS THE LOCATION OF THE FLEET WITH THE AVERAGE CATCH IN POUNDS.
2. - - - 110 Fathoms
3. EACH UNIT HAS AN AREA OF 36 sq MILES.
4. SURVEY CARRIED OUT FROM AUG 1 TO AUG 31, 1984.
FISHERIES AND OCEANS
PÊCHES ET OCÉANS
1984 OFFSHORE CRAB SURVEY
LABRADOR
FISHERIES DEVELOPMENT BRANCH
NEWFOUNDLAND REGION
DRAWN BY: MARTHA GALE
DATE DRAWN: OCT 30, 1984
BLACK TICKLE
LABRADOR
SQUARE IS

Fig. 11.

fleets deeper than 274 m (150 fathoms). Only three fleets had over 4.5 kg (10 lb) per pot of commercial sized crab; eighty five fleets caught none; 22 fleets had 1 to 4.5 kg (1 to 10 lb) per pot. One of the causes for these poor results may have been the deep water.

The area west of Longitude 54°00'W was surveyed in July; some of the survey units were resurveyed to determine if catch rates varied with the time of year. Catch rates were fairly consistent between July and September in depths ranging from 146 to 293 m (80 to 160 fathoms) but dropped off dramatically in September at depths less than 146 kg (80 fathoms) and greater than 293 kg (160 fathoms). Bottom temperatures were measured at 73 locations; the best catch per pot occurred between -1 and 0°C.

The catch rates varied from 0 to 21 kg (0 to 47 lb) per pot in July and from 0.1 to 19 kg (0.3 to 42.2 lb) per pot in September-October. Of the 127 fleets fished west of Longitude 54°00'W, 49 fleets produced less than 2.2 kg (5 lb) per pot, 58 fleets with 2.2 to 7 kg (5 to 15 lb) per pot, 11 fleets with 7.3 to 11 kg (16 to 25 lb) per pot and nine fleets with greater than 11 kg (25 lb) per pot.

The comparison of July and October catch rates in the area around the Grey Islands indicated that of 17 specific locations that produced good catches in July, 70 percent showed slightly lower catch rates in the Fall.

Labrador

This area is located off the coast of Labrador from St. Lewis Sound to approximately 20 nautical miles north of Black Tickle and from 12 to 65 nautical miles offshore (Fig. 11). There were 109 survey blocks fished in this area of 3,900 square miles.

Fishing depths during this period ranged from 139 to 403 kg (76 to 220 fathoms) and fishing time from 18 to 140 hours. Bottom temperatures were measured at 26 of the fleet locations. The best catch per pot occurred between temperatures of -1.0°C and +0.5°C and from 256 to 366 m (140 to 200 fathoms).

The catch rate fluctuated from 0 to 24 kg (0 to 53 lb) per pot; 79 fleets had less than 2.2 kg (5 lb) per pot, 13 fleets had between 2.2 and 7 kg (5 and 15 lb) per pot, 6 fleets had 7.2 to 11 kg (16 to 25 lb) per pot and 11 had greater than 11 kg (25 lb) per pot. In 15 fleets set in a north-south line from Unit No. L11 to Unit No. E1 showing catches ranging from 5.9 to 24 kg (13 to 53 lb) per pot in depths of 245 to 371 m (134 to 203 fathoms). This area which lay in a trough about 90 nautical miles was the most promising of the Labrador survey. Generally, there was considerable catch rate variability throughout the rest of the Labrador survey area.

1985 COMMERCIAL CRAB FISHING, LABRADOR

During 1985 two commercial crab vessels were provided assistance to fish off Labrador in areas where crab were located during 1983 and 1984

surveys (Fig. 12) (Barney and Wilton 1986).

The vessels fished inshore during the first few days but due to high catches of undersized and soft-shelled crab moved offshore. They then concentrated fishing effort in areas which showed good catch rates during the surveys.

The vessels landed a total of 331,128 kg (730,000 lb) of commercial crab or an average of 9,229 kg (20,346 lb) per vessel per trip. This total might have increased slightly if the vessels were not on a plant quota of approximately 11,340 kg (25,000 lb) each per trip.

The vessels were late in starting to fish off Labrador but very few problems were encountered once fishing began. On October 1 both parties decided to conclude the fishing effort. However, due to bad weather it was two weeks, until the 15 of October, before all their crab gear could be hauled from the water.

The areas fished by these vessels in 1985 only cover a portion of the areas where crab were found during the 1983 and 1984, which indicates that the crab grounds are larger than the areas fished. Searching may be required to find pockets of crab since they may have moved since the survey period.

SUMMARY

Most of the area around the island portion of Newfoundland has been surveyed or fished previously (Fig. 13). Several surveys between Port aux Basques and Fortune Bay have been conducted over the years, but only small

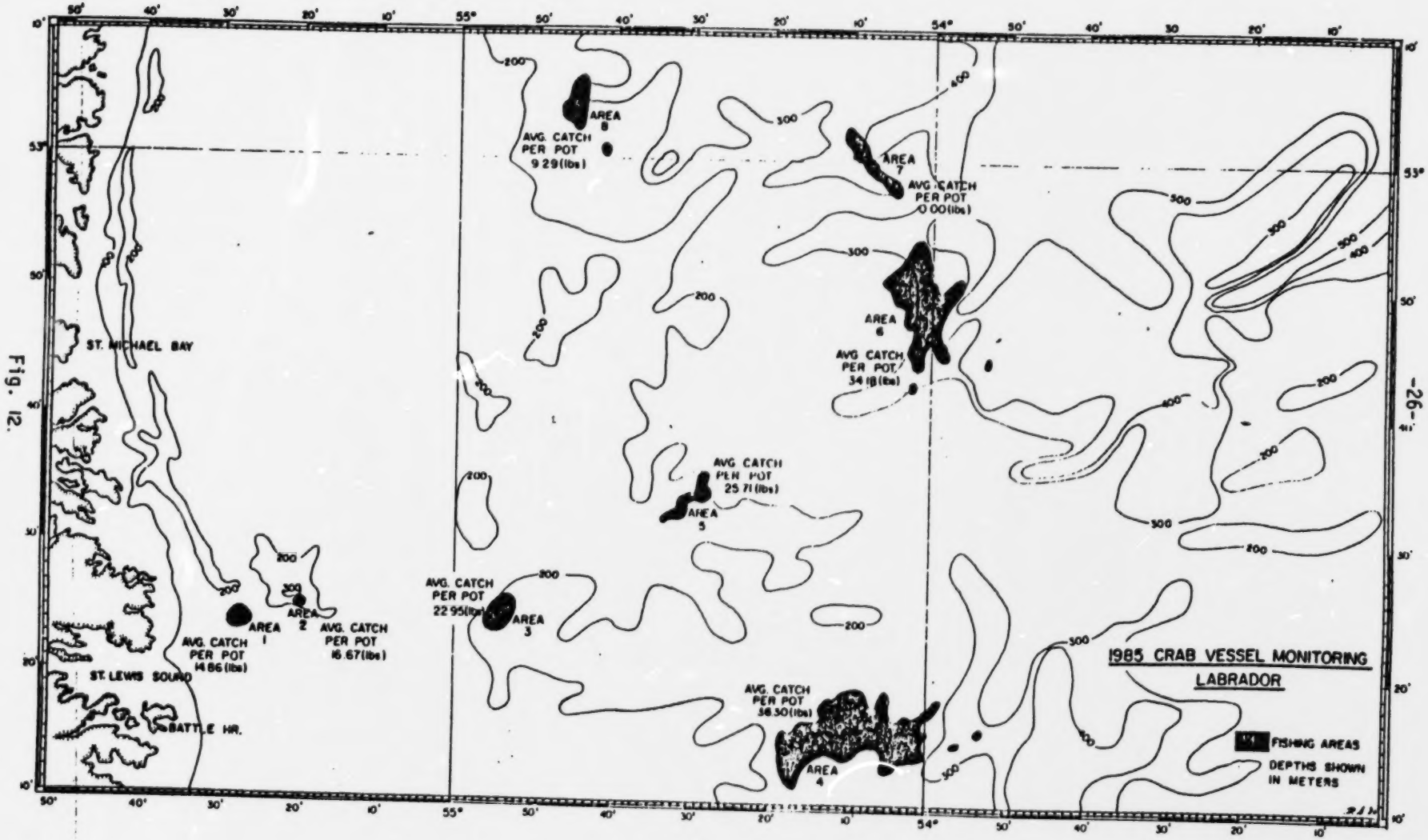

AREA 8
AVG. CATCH PER POT 9.29(lbs)
AREA 7
AVG. CATCH PER POT 0.00(lbs)
AREA 6
AVG. CATCH PER POT 34.18(lbs)
AVG CATCH PER POT 25.71(lbs)
AREA 5
AVG. CATCH PER POT 22.95(lbs)
AREA 3
AREA 2
AVG. CATCH PER POT 16.67(lbs)
AREA 1
AVG. CATCH PER POT 14.86(lbs)
AVG. CATCH PER POT 58.30(lbs)
AREA 4
ST. MICHAEL BAY
ST. LEWIS SOUND
BATTLE HR.
1985 CRAB VESSEL MONITORING
LABRADOR
FISHING AREAS
DEPTHS SHOWN IN METERS

Fig. 12.

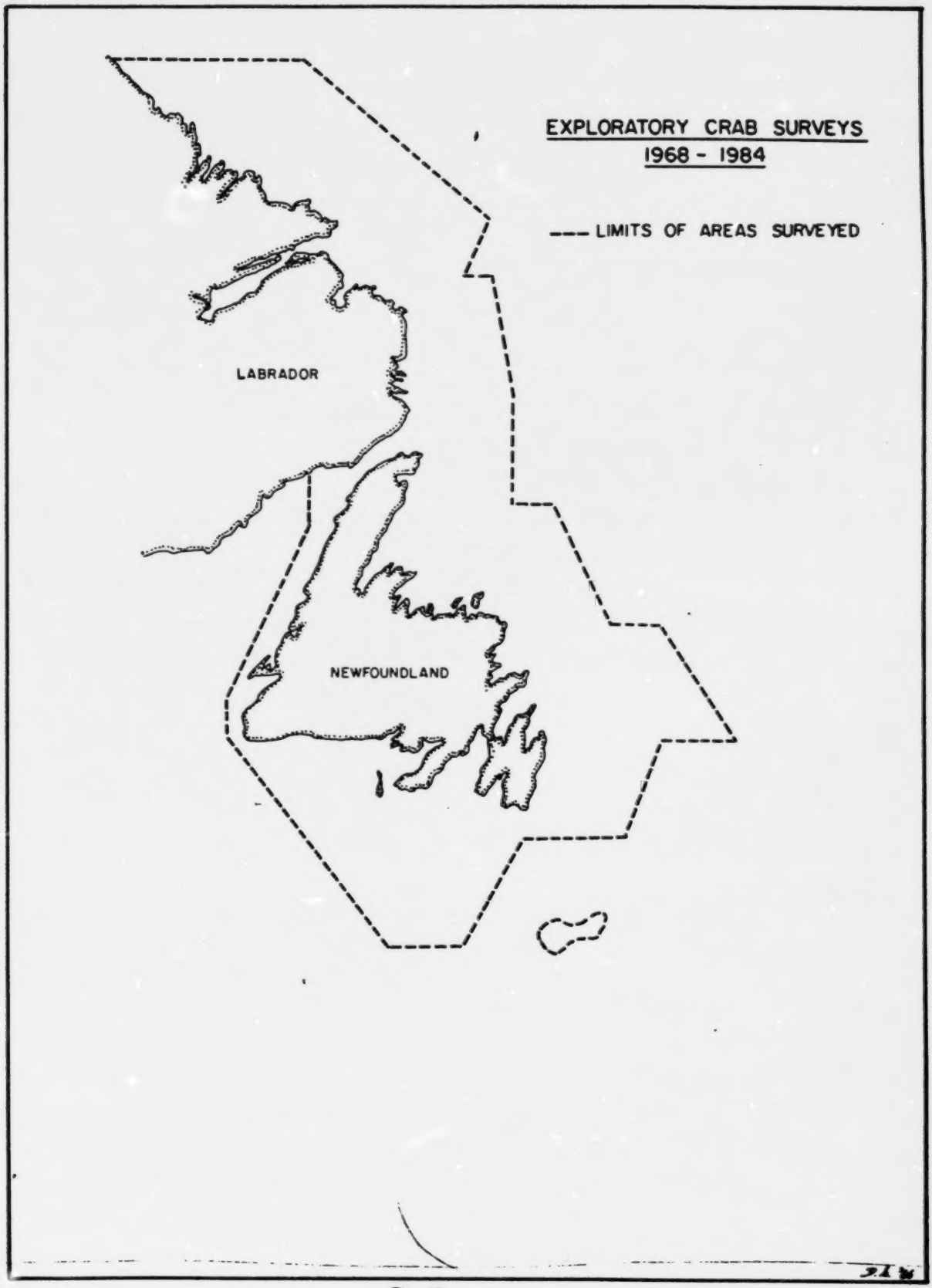

EXPLORATORY CRAB SURVEYS
1968 - 1984
--- LIMITS OF AREAS SURVEYED
LABRADOR
NEWFOUNDLAND

Fig. 13

catches were recorded. A 1983 survey found very little crab in Fortune Bay or around the mouth of Placentia Bay, even though the Placentia Bay area was fished during the early and mid-1970's. (No commcercial fishing has been carried out recently). The offshore region between the Burin and Avalon Peninsula was surveyed during the late sixties and again in 1983; catch rates were very poor.

Most areas from the eastern Avalon to Cape Freels are currently being fished or have been surveyed throughout the decade. Good crab catches were experienced east of Cape St. Francis during the 1981 and 1982 crab survey (Fig. 14). Since no crab were found along the edges of the continental shelf, no future surveys are planned.

The area north of Cape Freels was surveyed during the early eighties and a crab resource of commercial potential was found in the Notre Dame Bay region and around the Grey Islands up to 50 nautical miles offshore.

Along the Labrador coast, surveys carried out in 1983 and 1984 showed a resource with commercial potential off Belle Isle and St. Lewis Sound and in a large north-south trough nearly 600 square miles. A survey in (Fig. 1) 1976 produced some crab catches off Black Tickle but limited surveys north of this did not yield any crab.

In 1985, two commercial crab fishing vessels fished off the south coast of Labrador in NAFO Division 2J on a temporary permit. The two vessels landed 331,128 kg (730,000 lb) of crab during a 3-month period which shows great commercial potential for this area.

Fig. 13 and 14 shows areas which were surveyed and areas where crab resources were found.

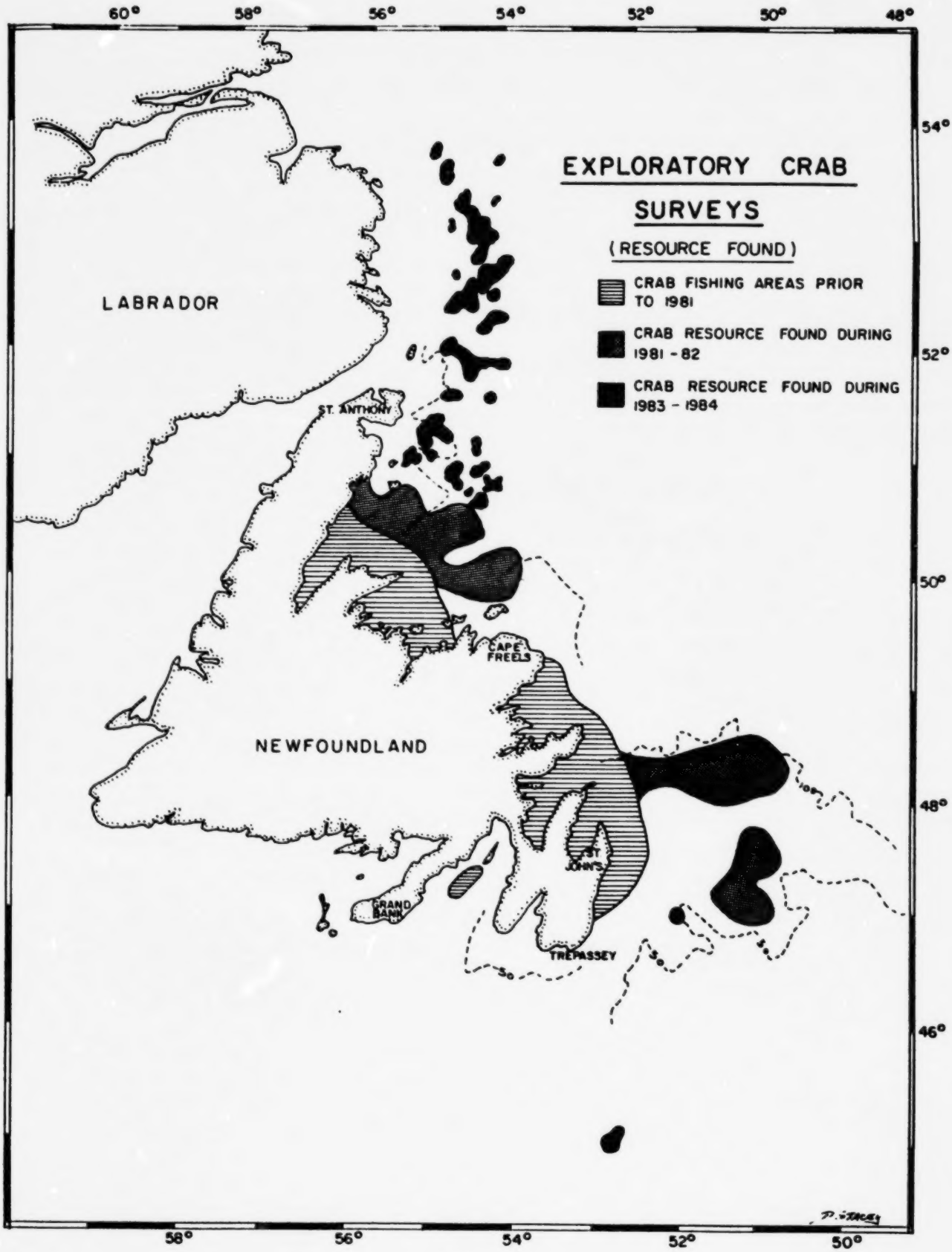

60°
58°
56°
54°
52°
50°
48°
54°
52°
50°
48°
46°
58°
56°
54°
52°
50°
EXPLORATORY CRAB
SURVEYS
(RESOURCE FOUND)
CRAB FISHING AREAS PRIOR TO 1981
CRAB RESOURCE FOUND DURING 1981 - 82
CRAB RESOURCE FOUND DURING 1983 - 1984
LABRADOR
ST. ANTHONY
CAPE FREELS
NEWFOUNDLAND
ST. JOHN'S
GRAND BANK
TREPASSEY

Fig. 14.

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